



Eastern Research Group
601 Keystone Park Drive
Suite 700
Morrisville, NC 27560

May 30, 2018

Ms. Jacqueline Nwia
U.S. Environmental Protection Agency, Region 5
77 West Jackson Blvd. (AR-18)
Chicago, IL 60604
Project Name: Ethylene Oxide

Dear Ms. Jacqueline Nwia,

This report contains the analytical results for the sample(s) received under chain(s) of custody by Eastern Research Group on 05/18/18 10:44 through 05/21/18 10:45.

The test results in this report are in compliance with NELAC accreditation requirements for the certified parameters. All analyses were performed as described in the US EPA-approved QAPP, under the contract for UATMP, NATTS, CSATAM, PAMS and NMOC support (US EPA Contract No. EP-D-14-030). This cover page is an integral part of this report, and any exceptions or comments are noted on the last page.

Release of the data contained in this data package and in the data submitted in the electronic data deliverable, has been authorized by the Program Manager, or the Program Manager's designee as verified by the following signature.

The issuance of the final Certificate of Analysis takes precedence over any previous Report. If you have any questions, please contact me at 919-468-7924.

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

The information contained in this report and its attachment(s) are intended only for the use of the individual to whom it is addressed and may contain information that is privileged, confidential, or exempt from disclosure. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this report is strictly prohibited. If you have received this report in error, please notify julie.swift@erg.com and delete the report without retaining any copies.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

ANALYTICAL REPORT FOR SAMPLES

<u>SampleName</u>	<u>LabNumber</u>	<u>Matrix</u>	<u>Sampled</u>	<u>Received</u>
EtO Grab 41.7489,-87.9353	8051813-01	Air	05/16/18 12:30	05/18/18 10:44
EtO Grab 41.7471,-87.9420	8051813-02	Air	05/16/18 12:38	05/18/18 10:44
EtO Grab D1	8051813-03	Air	05/16/18 12:51	05/18/18 10:44
EtO Grab D2	8051813-04	Air	05/16/18 12:51	05/18/18 10:44
EtO Grab 41.7486,-87.9461	8051813-05	Air	05/16/18 13:05	05/18/18 10:44
EtO Grab 41.7490,-87.9423	8051813-06	Air	05/16/18 13:13	05/18/18 10:44
EtO Grab 41.7483,-87.9459	8051813-07	Air	05/16/18 13:27	05/18/18 10:44
EtO D1 41.7474,-87.9385	8051813-08	Air	05/16/18 17:09	05/18/18 10:44
EtO D2 41.7474,-87.9385	8051813-09	Air	05/16/18 17:12	05/18/18 10:44
EtO 41.7483,-87.9459	8051813-10	Air	05/16/18 17:50	05/18/18 10:44
EtO D1 41.7474,-87.9385	8051813-11	Air	05/16/18 06:20	05/18/18 10:44
EtO D2 41.7474,-87.9385	8051813-12	Air	05/17/18 06:20	05/18/18 10:44
Ethylene Oxide Upwind 12hr	8051813-13	Air	05/17/18 07:01	05/18/18 10:44
EtO 41.7483,-87.9459	8051813-14	Air	05/17/18 07:12	05/18/18 10:44
EtO 41.7453,-87.9439	8051813-15	Air	05/16/18 17:37	05/18/18 10:44
EtO 41.7453,-87.9439	8051813-16	Air	05/17/18 06:50	05/18/18 10:44
EtO 41.7505,-87.9371	8051813-17	Air	05/16/18 17:44	05/18/18 10:44
EtO Grab 41.7484,-87.9493	8052134-01	Air	05/17/18 10:34	05/21/18 10:45
EtO Grab 41.7461,-87.9440	8052134-02	Air	05/17/18 14:46	05/21/18 10:45
EtO Grab 41.7467,-87.9384	8052134-03	Air	05/17/18 15:05	05/21/18 10:45
EtO Grab 41.7519,-87.9373	8052134-04	Air	05/17/18 10:12	05/21/18 10:45
EtO Grab 41.7470,-87.9475	8052134-05	Air	05/17/18 14:36	05/21/18 10:45
EtO Grab 41.7467,-87.9421	8052134-06	Air	05/17/18 10:53	05/21/18 10:45

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 **FAX:** (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

EtO Grab 41.7517,-87.9415	8052134-07	Air	05/17/18 10:20	05/21/18 10:45
EtO 41.7453,-87.9439	8052134-08	Air	05/17/18 18:15	05/21/18 10:45
EtO Grab D1	8052134-09	Air	05/17/18 10:42	05/21/18 10:45
EtO Grab D2	8052134-10	Air	05/17/18 10:42	05/21/18 10:45
EtO D1 41.7487,-87.9426	8052134-11	Air	05/18/18 06:37	05/21/18 10:45
EtO D2 41.7487,-87.9426	8052134-12	Air	05/18/18 06:37	05/21/18 10:45
EtO 41.7519,-87.9327	8052134-13	Air	05/18/18 06:29	05/21/18 10:45
EtO 41.7487,-87.9426	8052134-14	Air	05/17/18 18:52	05/21/18 10:45
EtO Grab 41.7450,-87.9403	8052134-15	Air	05/17/18 10:59	05/21/18 10:45
EtO Grab 41.7488,-87.9429	8052134-16	Air	05/17/18 14:53	05/21/18 10:45
EtO Grab 41.7500,-87.9360	8052134-17	Air	05/17/18 14:59	05/21/18 10:45
EtO 41.7483,-87.9459	8052134-18	Air	05/17/18 18:23	05/21/18 10:45
EtO Grab 41.7469,-87.9455	8052134-19	Air	05/17/18 14:33	05/21/18 10:45
EtO Grab D1	8052134-20	Air	05/17/18 14:27	05/21/18 10:45
EtO Grab D2	8052134-21	Air	05/17/18 14:27	05/21/18 10:45
EtO D1 41.7474,-87.9385	8052134-22	Air	05/17/18 17:53	05/21/18 10:45
EtO D2 41.7474,-87.9385	8052134-23	Air	05/17/18 17:53	05/21/18 10:45
EtO 41.7505,-87.9371	8052134-24	Air	05/17/18 18:30	05/21/18 10:45

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7489,-87.9353

Lab ID: 8051813-01

Sampled: 05/16/18 12:30

Pressure @ Receipt: 2.00" Hg

Canister #: 19644

Received: 05/18/18 10:44

Comments: Ambient temp: 78F

Analyzed: 05/22/18 06:03

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.122	0.22		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7471,-87.9420

Lab ID: 8051813-02

Sampled: 05/16/18 12:38

Pressure @ Receipt: 2.00" Hg

Canister #: SAT094

Received: 05/18/18 10:44

Comments: Ambient temp: 78F. Ambient at field site recovery.

Analyzed: 05/22/18 07:05

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.867	1.57		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab D1 41.7450,-87.9454

Lab ID: 8051813-03

Sampled: 05/16/18 12:51

Pressure @ Receipt: 2.5" Hg

Canister #: SAT169

Received: 05/18/18 10:44

Comments: Dup 1 Ambient temp: 78F. Ambient at field site recovery.

Analyzed: 05/21/18 17:35

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	1.26	2.27		0.0453



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab D2 41.7450,-87.9454

Lab ID: 8051813-04

Sampled: 05/16/18 12:51

Pressure @ Receipt: 2.5" Hg

Canister #: A21056

Received: 05/18/18 10:44

Comments: Dup 2 Ambient temp: 78F. Ambient at field site recovery.

Analyzed: 05/21/18 18:37

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	1.20	2.17		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7486,-87.9461

Lab ID: 8051813-05

Sampled: 05/16/18 13:05

Pressure @ Receipt: 2.5" Hg

Canister #: SAT061

Received: 05/18/18 10:44

Comments: Ambient temp: 79F. Ambient at field site recovery.

Analyzed: 05/22/18 08:08

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.196	0.35		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7490,-87.9423

Lab ID: 8051813-06

Sampled: 05/16/18 13:13

Pressure @ Receipt: 2.0" Hg

Canister #: 5132

Received: 05/18/18 10:44

Comments: Ambient temp: 78F. Ambient at field site recovery.

Analyzed: 05/22/18 09:10

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	2.36	4.26		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7483,-87.9459

Lab ID: 8051813-07

Sampled: 05/16/18 13:27

Pressure @ Receipt: 2.6" Hg

Canister #: SAT085

Received: 05/18/18 10:44

Comments: Ambient temp: 78F. Ambient at field site recovery.

Analyzed: 05/22/18 10:12

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	2.40	4.33		0.0453



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO D1 41.7474,-87.9385	Lab ID: 8051813-08	Sampled: 05/16/18 17:09
Pressure @ Receipt: 10.00" Hg	Canister #: 19277	Received: 05/18/18 10:44
Comments: Dup 1		Analyzed: 05/21/18 21:44

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.0872	0.16		0.0453



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO D2 41.7474,-87.9385

Lab ID: 8051813-09

Sampled: 05/16/18 17:12

Pressure @ Receipt: 10.00" Hg

Canister #: SAT166

Received: 05/18/18 10:44

Comments: Dup 2

Analyzed: 05/21/18 22:47

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.224	0.40		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO 41.7483,-87.9459	Lab ID: 8051813-10	Sampled: 05/16/18 17:50
Pressure @ Receipt: 2.0" Hg	Canister #: 5090	Received: 05/18/18 10:44
Comments: Ambient at field site recovery		Analyzed: 05/22/18 11:15

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.286	0.52		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO D1 41.7474,-87.9385

Lab ID: 8051813-11

Sampled: 05/16/18 06:20

Pressure @ Receipt: 7.50" Hg

Canister #: A21042

Received: 05/18/18 10:44

Comments: Dup 1 Ambient temp 78F to 53F

Analyzed: 05/22/18 18:34

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	5.02	9.06	D	0.0906

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO D2 41.7474,-87.9385

Lab ID: 8051813-12

Sampled: 05/17/18 06:20

Pressure @ Receipt: 7.00" Hg

Canister #: SAT027

Received: 05/18/18 10:44

Comments: Dup 2 Ambient temp 78F to 53F

Analyzed: 05/22/18 19:35

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	4.60	8.30	D	0.0906

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: Ethylene Oxide Upwind 12hr

Lab ID: 8051813-13

Sampled: 05/17/18 07:01

Pressure @ Receipt: 0.7" Hg

Canister #: SAT074

Received: 05/18/18 10:44

Comments: Flow regulator loos at collection. Ambient at field site recovery

Analyzed: 05/22/18 12:17

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.364	0.66		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO 41.7483,-87.9459

Lab ID: 8051813-14

Sampled: 05/17/18 07:12

Pressure @ Receipt: 9.50" Hg

Canister #: 19652

Received: 05/18/18 10:44

Comments: Temp: 76F to 55F

Analyzed: 05/22/18 13:19

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	1.17	2.11		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO 41.7453,-87.9439

Lab ID: 8051813-15

Sampled: 05/16/18 17:37

Pressure @ Receipt: 12.50" Hg

Canister #: 5142

Received: 05/18/18 10:44

Comments:

Analyzed: 05/22/18 14:22

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	1.96	3.54		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO 41.7453,-87.9439	Lab ID: 8051813-16	Sampled: 05/17/18 06:50
Pressure @ Receipt: 8.00" Hg	Canister #: 19641	Received: 05/18/18 10:44
Comments: Ambient temp: 76F to 58F		Analyzed: 05/22/18 22:39

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	2.14	3.86		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO 41.7505,-87.9371

Lab ID: 8051813-17

Sampled: 05/16/18 17:44

Pressure @ Receipt: 11.50" Hg

Canister #: SAT007

Received: 05/18/18 10:44

Comments:

Analyzed: 05/22/18 23:42

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.256	0.46		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7484,-87.9493	Lab ID: 8052134-01	Sampled: 05/17/18 10:34
Pressure @ Receipt: 2.4" Hg	Canister #: A21065	Received: 05/21/18 10:45
Comments: Ambient temp: 74F Ambient at field site recovery		Analyzed: 05/23/18 00:45

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.161	0.29		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7461,-87.9440

Lab ID: 8052134-02

Sampled: 05/17/18 14:46

Pressure @ Receipt: 2.4" Hg

Canister #: SAT009

Received: 05/21/18 10:45

Comments: Ambient temp: 74F Ambient at field site recovery

Analyzed: 05/23/18 01:47

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.739	1.33		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7467,-87.9384

Lab ID: 8052134-03

Sampled: 05/17/18 15:05

Pressure @ Receipt: 2.7" Hg

Canister #: SAT020

Received: 05/21/18 10:45

Comments: Ambient temp: 74F Ambient at field site recovery

Analyzed: 05/23/18 02:49

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.114	0.21		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7519,-87.9373

Lab ID: 8052134-04

Sampled: 05/17/18 10:12

Pressure @ Receipt: 2.1" Hg

Canister #: SAT133

Received: 05/21/18 10:45

Comments: Ambient temp: 74F Ambient at field site recovery

Analyzed: 05/23/18 03:52

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.187	0.34		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7470,-87.9475

Lab ID: 8052134-05

Sampled: 05/17/18 14:36

Pressure @ Receipt: 2.3" Hg

Canister #: SAT101

Received: 05/21/18 10:45

Comments: Ambient temp: 74F Ambient at field site recovery

Analyzed: 05/23/18 04:54

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.134	0.24		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7467,-87.9421

Lab ID: 8052134-06

Sampled: 05/17/18 10:53

Pressure @ Receipt: 2.6" Hg

Canister #: A21012

Received: 05/21/18 10:45

Comments: Ambient temp: 74F Ambient at field site recovery

Analyzed: 05/23/18 05:57

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.273	0.49		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7517,-87.9415

Lab ID: 8052134-07

Sampled: 05/17/18 10:20

Pressure @ Receipt: 2.1" Hg

Canister #: SAT095

Received: 05/21/18 10:45

Comments: Ambient temp: 74F Ambient at field site recovery

Analyzed: 05/23/18 06:59

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.224	0.40		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO 41.7453,-87.9439

Lab ID: 8052134-08

Sampled: 05/17/18 18:15

Pressure @ Receipt: 9.00" Hg

Canister #: 19662

Received: 05/21/18 10:45

Comments: Ambient temp: 55F to 59F

Analyzed: 05/23/18 08:01

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	2.52	4.55		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab D1 41.7485,-87.9438

Lab ID: 8052134-09

Sampled: 05/17/18 10:42

Pressure @ Receipt: 2.6" Hg

Canister #: SAT173

Received: 05/21/18 10:45

Comments: Dup 1 Ambient temp: 74F. Ambient at field site recovery.

Analyzed: 05/23/18 09:03

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.564	1.02		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab D2 41.7485,-87.9438

Lab ID: 8052134-10

Sampled: 05/17/18 10:42

Pressure @ Receipt: 2.5" Hg

Canister #: 5052

Received: 05/21/18 10:45

Comments: Dup 2 Ambient temp: 74F. Ambient at field site recovery.

Analyzed: 05/23/18 10:06

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.573	1.03		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO D1 41.7487,-87.9426

Lab ID: 8052134-11

Sampled: 05/18/18 06:37

Pressure @ Receipt: 8.00" Hg

Canister #: 18827

Received: 05/21/18 10:45

Comments: Dup 1 Ambient temp: 59F to 54F

Analyzed: 05/23/18 16:29

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	2.73	4.93	D-F	0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO D2 41.7487,-87.9426

Lab ID: 8052134-12

Sampled: 05/18/18 06:37

Pressure @ Receipt: 0.5" Hg

Canister #: 5124

Received: 05/21/18 10:45

Comments: Dup 2 Ambient temp: 59F to 54F. Ambient at field site recovery

Analyzed: 05/23/18 17:31

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	2.04	3.68	D-F	0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO 41.7519,-87.9327	Lab ID: 8052134-13	Sampled: 05/18/18 06:29
Pressure @ Receipt: 9.50" Hg	Canister #: 5101	Received: 05/21/18 10:45
Comments: Ambient temp: 59F to 54F		Analyzed: 05/23/18 20:38

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.187	0.34		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO 41.7487,-87.9426

Lab ID: 8052134-14

Sampled: 05/17/18 18:52

Pressure @ Receipt: 10.50" Hg

Canister #: 19650

Received: 05/21/18 10:45

Comments: Ambient temp: 58F to 59F

Analyzed: 05/23/18 21:40

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	4.55	8.21		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7450,-87.9403

Lab ID: 8052134-15

Sampled: 05/17/18 10:59

Pressure @ Receipt: 2.4" Hg

Canister #: 5053

Received: 05/21/18 10:45

Comments: Ambient temp: 74F Ambient at field site recovery

Analyzed: 05/23/18 22:42

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.227	0.41		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7488,-87.9429

Lab ID: 8052134-16

Sampled: 05/17/18 14:53

Pressure @ Receipt: 2.5" Hg

Canister #: 5072

Received: 05/21/18 10:45

Comments: Ambient temp: 74F Ambient at field site recovery

Analyzed: 05/23/18 23:44

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.247	0.45		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7500,-87.9360

Lab ID: 8052134-17

Sampled: 05/17/18 14:59

Pressure @ Receipt: 2.3" Hg

Canister #: 19651

Received: 05/21/18 10:45

Comments: Ambient temp: 74F Ambient at field site recovery

Analyzed: 05/24/18 00:46

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.0961	0.17		0.0453



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO 41.7483,-87.9459	Lab ID: 8052134-18	Sampled: 05/17/18 18:23
Pressure @ Receipt: 11.00" Hg	Canister #: 18864	Received: 05/21/18 10:45
Comments: Ambient temp: 55F to 58F		Analyzed: 05/24/18 01:49

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.541	0.98		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab 41.7469,-87.9455

Lab ID: 8052134-19

Sampled: 05/17/18 14:33

Pressure @ Receipt: 2.2" Hg

Canister #: SAT034

Received: 05/21/18 10:45

Comments: Ambient temp: 74F Ambient at field site recovery

Analyzed: 05/24/18 02:51

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.517	0.93		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab D1 41.7508,-87.9456

Lab ID: 8052134-20

Sampled: 05/17/18 14:27

Pressure @ Receipt: 2.2" Hg

Canister #: 18875

Received: 05/21/18 10:45

Comments: Dup 1 Ambient temp: 74F. Ambient at field site recovery.

Analyzed: 05/24/18 03:53

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.0903	0.16		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO Grab D2 41.7508,-87.9456

Lab ID: 8052134-21

Sampled: 05/17/18 14:27

Pressure @ Receipt: 2.1" Hg

Canister #: 19294

Received: 05/21/18 10:45

Comments: Dup 2 Ambient temp: 74F. Ambient at field site recovery.

Analyzed: 05/24/18 04:55

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Ethylene oxide	0.118	0.21		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO D1 41.7474,-87.9385

Lab ID: 8052134-22

Sampled: 05/17/18 17:53

Pressure @ Receipt: 8.00" Hg

Canister #: 5017

Received: 05/21/18 10:45

Comments: Dup 1 Ambient temp: 53F to 68F

Analyzed: 05/24/18 08:02

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.557	1.01		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO D2 41.7474,-87.9385

Lab ID: 8052134-23

Sampled: 05/17/18 17:53

Pressure @ Receipt: 9.00" Hg

Canister #: 19290

Received: 05/21/18 10:45

Comments: Dup 2 Ambient temp: 53F to 68F

Analyzed: 05/24/18 09:04

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.436	0.79		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Description: EtO 41.7505,-87.9371	Lab ID: 8052134-24	Sampled: 05/17/18 18:30
Pressure @ Receipt: 1.2" Hg	Canister #: 5100	Received: 05/21/18 10:45
Comments: Ambient temp: 55F to 59F. Upwind rerun. Flow regulator loose at		Analyzed: 05/24/18 12:11

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Ethylene oxide	0.479	0.87		0.0453

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Analyte	Result	Units	Source Result	RPD	RPD Limit	Notes
---------	--------	-------	---------------	-----	-----------	-------

Air Toxics by EPA Compendium Method TO-15 - Quality Control

Batch B8E2105 - Summa Canister Prep

Blank (B8E2105-BLK1)

Prepared: 05/14/18 Analyzed: 05/21/18

Ethylene oxide	ND	ppbv				U
----------------	----	------	--	--	--	---

Duplicate (B8E2105-DUP1)

Source: 8051813-03

Prepared: 05/16/18 Analyzed: 05/21/18

Ethylene oxide	1.39	ppbv	1.26	9.74	25	
----------------	------	------	------	------	----	--

Duplicate (B8E2105-DUP2)

Source: 8051813-04

Prepared: 05/16/18 Analyzed: 05/21/18

Ethylene oxide	1.27	ppbv	1.20	5.71	25	
----------------	------	------	------	------	----	--

Duplicate (B8E2105-DUP3)

Source: 8051813-08

Prepared: 05/16/18 Analyzed: 05/21/18

Ethylene oxide	0.0660	ppbv	0.09	27.7	25	
----------------	--------	------	------	------	----	--

Duplicate (B8E2105-DUP4)

Source: 8051813-09

Prepared: 05/16/18 Analyzed: 05/22/18

Ethylene oxide	0.188	ppbv	0.22	17.0	25	
----------------	-------	------	------	------	----	--

Duplicate (B8E2105-DUP5)

Source: 8051813-11

Prepared: 05/16/18 Analyzed: 05/22/18

Ethylene oxide	5.19	ppbv	5.02	3.26	25	D
----------------	------	------	------	------	----	---

Duplicate (B8E2105-DUP6)

Source: 8051813-12

Prepared: 05/16/18 Analyzed: 05/22/18

Ethylene oxide	4.72	ppbv	4.60	2.72	25	D
----------------	------	------	------	------	----	---

Batch B8E2208 - Summa Canister Prep

Blank (B8E2208-BLK1)

Prepared: 05/16/18 Analyzed: 05/22/18

Ethylene oxide	ND	ppbv				U
----------------	----	------	--	--	--	---

Duplicate (B8E2208-DUP1)

Source: 8052134-09

Prepared: 05/17/18 Analyzed: 05/23/18

Ethylene oxide	0.588	ppbv	0.56	4.13	25	
----------------	-------	------	------	------	----	--

Duplicate (B8E2208-DUP2)

Source: 8052134-10

Prepared: 05/17/18 Analyzed: 05/23/18

Ethylene oxide	0.588	ppbv	0.57	2.57	25	
----------------	-------	------	------	------	----	--

Batch B8E2305 - Summa Canister Prep

Blank (B8E2305-BLK1)

Prepared & Analyzed: 05/23/18

Ethylene oxide	ND	ppbv				U
----------------	----	------	--	--	--	---

Duplicate (B8E2305-DUP1)

Source: 8052134-11

Prepared: 05/18/18 Analyzed: 05/23/18

Ethylene oxide	2.80	ppbv	2.73	2.66	25	
----------------	------	------	------	------	----	--

Duplicate (B8E2305-DUP2)

Source: 8052134-12

Prepared: 05/18/18 Analyzed: 05/23/18

Ethylene oxide	2.07	ppbv	2.04	1.09	25	
----------------	------	------	------	------	----	--

Duplicate (B8E2305-DUP3)

Source: 8052134-20

Prepared: 05/17/18 Analyzed: 05/24/18

Ethylene oxide	0.0870	ppbv	0.09	3.72	25	
----------------	--------	------	------	------	----	--

Duplicate (B8E2305-DUP4)

Source: 8052134-21

Prepared: 05/17/18 Analyzed: 05/24/18

Ethylene oxide	0.0857	ppbv	0.12	31.6	25	
----------------	--------	------	------	------	----	--

Duplicate (B8E2305-DUP5)

Source: 8052134-22

Prepared: 05/17/18 Analyzed: 05/24/18

Ethylene oxide	0.548	ppbv	0.56	1.61	25	
----------------	-------	------	------	------	----	--

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 **FAX:** (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Analyte	Result	Units	Source Result	RPD	RPD Limit	Notes
---------	--------	-------	------------------	-----	--------------	-------

Air Toxics by EPA Compendium Method TO-15 - Quality Control

Batch B8E2305 - Summa Canister Prep

Duplicate (B8E2305-DUP6)

Source: 8052134-23

Prepared: 05/17/18

Analyzed: 05/24/18

Ethylene oxide	0.396	ppbv	0.44	9.49	25	
----------------	-------	------	------	------	----	--

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 FAX: (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Analyte	Result	Units	% Difference	Limit (%)	Notes
---------	--------	-------	--------------	-----------	-------

Air Toxics by EPA Compendium Method TO-15 - Quality Control

Sequence 1805056

Calibration Check (1805056-CCV1)

Prepared & Analyzed: 05/21/18

Ethylene oxide	2.54	ppbv	1.5	30.00
----------------	------	------	-----	-------

Sequence 1805059

Calibration Check (1805059-CCV1)

Prepared & Analyzed: 05/22/18

Ethylene oxide	2.77	ppbv	10.8	30.00
----------------	------	------	------	-------

Sequence 1805062

Calibration Check (1805062-CCV1)

Prepared & Analyzed: 05/23/18

Ethylene oxide	2.51	ppbv	0.4	30.00
----------------	------	------	-----	-------

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 5

77 West Jackson Blvd. (AR-18)

Chicago, IL 60604

ATTN: Ms. Jacqueline Nwia

PHONE: (312) 886-6081 **FAX:** (312) 886-5824

FILE #: 0344.00

REPORTED: 05/30/18 11:04

SUBMITTED: 05/18/18 to 05/21/18

AQS SITE CODE:

SITE CODE: Ethylene Oxide

Notes and Definitions

U	Under Detection Limit
D-F	Duplicate exceeds DQO criteria.
D	This result obtained by dilution.
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

Note: The test results meet all requirements of NELAC; however the following analytes are not accredited: 1,2,4-trimethylbenzene, 1,2-dibromoethane, 1,2-dichloropropane, 1,3,5-trimethylbenzene, 1,3-butadiene, acetylene, acrolein, bromochloromethane, bromodichloromethane, bromoform, carbon disulfide, dibromochloromethane, dichlorodifluoromethane, dichlorotetrafluoroethane, ethyl acrylate, ethyl tert butyl ether, hexachloro-1,3-butadiene, octane, propylene, tert amyl methyl ether, tetrachloroethylene, tran-1,2-dichloroethylene, trichlorofluoromethane, trichlorotrifluoroethane and ethylene oxide.